

1 UNITED STATES DISTRICT COURT
2 DISTRICT OF MASSACHUSETTS

3
4 SINGULAR COMPUTING LLC,)
5 Plaintiff) Civil Action
6 vs.) No. 19-12551-FDS
7)
8 GOOGLE LLC,)
Defendant)

9
10 BEFORE: CHIEF JUDGE F. DENNIS SAYLOR, IV

11
12 MOTION HEARING

13
14 John Joseph Moakley United States Courthouse
15 1 Courthouse Way
16 Boston, MA 02210

17
18 January 11, 2023
3:00 p.m.

19
20
21
22
23 Valerie A. O'Hara, FCRR, RPR
24 Official Court Reporter
John Joseph Moakley United States Courthouse
25 1 Courthouse Way
Boston, MA 02210
E-mail: vaohara@gmail.com

1 APPEARANCES:

2 For The Plaintiff:

3 Prince, Lobel, Tye, LLP, by PAUL J. HAYES, ESQ., and
4 KEVIN GANNON, ESQ., One International Place, Boston,
Massachusetts 02110;

5 For the Defendant:

6 Keker, Van Nest & Peters LLP, by ROBERT A. VAN NEST, ESQ.,
7 633 Battery March Street, San Francisco, California 94111;

8 Paul Hastings LLP, by MATTHIAS A. KAMBER, ESQ.,
9 101 California Street, Suite Forty-Eighth Floor
San Francisco, CA 94111;

10 Kwun, Bhansali, Lazarus LLP, by ASIM M. BHANSALI, ESQ.,
11 555 Montgomery Street, Suite 750, San Francisco, California
94111;

12 Wolf, Greenfield & Sacks, P.C., by NATHAN R. SPEED, ESQ.,
600 Atlantic Avenue, Boston, Massachusetts 02210.

13

14

15

16

17

18

19

20

21

22

23

24

25

1

4

7

9

0

11

12

17

03:02PM 20

22

23

25

1 it says, "Prior art references at issue," and I have
2 patents, printed publications, and devices, and that is
3 because that's our motion is to basically kick out all
4 three for a variety of reasons.

5 I noted in my Brother's slides, he just has
6 devices, and I just want to make sure that what we're
7 talking about, we're all on the same page as to what's at
8 issue here and what we filed on was to kick out all
9 patents, printed publications, and devices, so with that
03:03PM 10 said, the second page --

11 THE COURT: Let me, before just having done at
12 least some preliminary reading or thinking about this, the
13 case law seems to use "device," "product," "system" kind of
14 interchangeably, like things that are not patents or
15 printed publications, and if there's any difference that
16 matters in this context, you should enlighten me.

17 MR. HAYES: No, when I say "a device," I mean a
18 device, like a chip or a system is a device or, you know,
19 an ice creamer maker is a device. A device is something
03:03PM 20 that it's not written, it's a physical thing.

21 All right. So the next page is pretty simple is
22 that here we identify the actual patents and printed
23 publications that Google knew of as of the IPR, and they're
24 identified here, and we do that to make sure that after we
25 get through all this, if you should rule that, in fact,

1 they're out, we know what's out. Those are out. They
2 don't somehow filter in later on in the case so that's
3 pretty simple as to what the patents and publications are,
4 and our position as to why, in fact, they should be out is
5 set forth in the *Cal Tech* case exactly the situation, and
6 it's also, I think, affirmed by your Honor when you bounced
7 the last two patents out that we dealt with. So that's a
8 pretty simple circumstance on the summary judgment issue to
9 whittle down the validity matter.

03:04PM 10 Now, the next page we're sort of getting into the
11 devices but not yet. In Google's validity contentions that
12 it filed on November 6th, which is right when they filed
13 the IPR, when they cited all patents, et cetera, they cited
14 the three printed publications or four. There are actually
15 four printed publications that are listed here.

16 These are the printed publications that describe
17 the three devices that are presently at issue. The first
18 device that they talk about is VFLOAT. That is described
19 in this *Belanovic/Lesser Library* publications.

03:05PM 20 The CNAPS device is described in the network of
21 adapted processors and the highly parallellized, whatever,
22 GRAPE-3 is described in that publication. There's no
23 dispute on that.

24 And so the next issue is, as Google knew of them
25 at the time of the IPR, it is now estopped from relying

1 upon it, period, of these publications, and I think that's
2 for the same reason that they can't rely on the patents in
3 the other publications, they can't rely on these. These
4 are not like special publications or something, they're a
5 printed publication under the law, so that's the easy part
6 of what I think the case -- of what we're here for.

7 Now, we get to device estoppel, and by device,
8 right, we're talking system or whatever they want to call
9 it, and there are three devices that are the subject we
03:06PM 10 just talked about, VFLOAT, CNAPS, and the last one,
11 GRAPE-3.

12 Now, in its invalidity contentions, Google
13 submitted claim charts, and those claim charts applied the
14 claims at issue, that's important, Claim 7 and 53, to the
15 printed publications describing the devices at issue.

16 They then, in their contentions, they represent
17 that these printed publications describing the devices at
18 issue disclose each and every limitation of the asserted
19 claims, each and every one, and, for example, I suggest if
03:07PM 20 you want to look, get a feel for that, if you look at the
21 Belanovic/Lesser claim chart -- and they're all about 20
22 pages long. These aren't like off the cuff type of claim
23 charts. It's 21 pages -- they applied the claimed elements
24 on an element-by-element basis, concluding that the printed
25 publications, which they didn't disclose to the Patent

1 Office, describing the products that are specifically at
2 issue here anticipate and render invalid the claims at
3 issue.

4 Now, the next portion of this slide is the case
5 law, and, obviously, Google could have submitted this
6 stated anticipatory art to the Patent Office, but it
7 purposely chose not to do it for obvious reasons. They
8 chose it to try to hedge their bets, just in case they lost
9 the IPR, which they did, and that is a no-no.

03:08PM 10 That is prohibited under the case law that we
11 reference, and the *Wasica* case that I think is just in --
12 recently, anyways, in Delaware, Judge Stark, and the other
13 ones, they all stand for basically the same proposition
14 that you don't get two bites at the apple by just, as in
15 the next slide. The next slide is some more case law, but
16 it's what we're thinking about, and the idea of just
17 swapping labels. That's what the *Cal Tech.* says, you don't
18 get to do that.

19 And what Google is doing in substance is doing
03:09PM 20 nothing more than putting lipstick on the pig. They go and
21 they represent that these publications render invalid the
22 asserted claims. They have each and every element.

23 Now, they don't give it to the Patent Office, they
24 lose in the Patent Office, so what do they say? Oh, well,
25 they're not publications, they're devices. Of course

1 they're devices. They're describing the exact device
2 that's the subject of the dispute.

3 And then we get the case law that stands with
4 *Wasica*, et cetera about how the fact that where you're
5 relying on a device that's cumulative, well, then you're
6 out. That's the law that we cited. And this last
7 statement on this *Oil-Dri* case gets to the argument that
8 we're talking about here. It says, "Where there is
9 evidence that a petitioner had reasonable access to printed
03:10PM 10 publications corresponding to or describing a product that
11 it could have proffered to the IPR, it cannot avoid
12 estoppel by simply pointing to its finished product," et
13 cetera.

14 That is exactly their strategy. That's exactly
15 what they tried to do. They certainly could have brought
16 the printed publications to the Patent Office. They could
17 have argued, as they did in their argument in their claim
18 charts, that it invalidates and it anticipates the
19 invention, and they chose not to.

03:10PM 20 That's exactly opposite what you're supposed to do
21 if you're going up The Hill in the Patent Office, but they
22 did it because of the strategy, the strategy of, well, if
23 we lose, we'll just go say they're all devices and go up
24 The Hill anyways.

25 And the next slide is, again, it's case law,

1 et cetera, and it's your case, but it's not directly on
2 point, but it's on the idea of estoppel here. The idea is
3 you don't get two bites at the apple. You don't play the
4 game and get the bites at the apple because otherwise the
5 whole purpose of estoppel is for not. I mean, the whole
6 purpose of the IPR is for not, and, here, the next slide is
7 where it drives it home on our argument, Judge.

8 Google's devices, and, by the way, what's
9 interesting, in a 22-page brief, no one even mentions the
03:11PM 10 claim charts. I couldn't find the word "claim chart"
11 anywhere in their brief. They don't mention that they
12 represented that they have all the elements and that they
13 anticipate. They forget about it.

14 Well, here there can be no dispute in this case
15 that these printed publications describe the accused
16 products. Why do I say there can be no dispute? They
17 represented element-by-element in a 21-page document, and
18 they said point blank in the intro they have each and every
19 element.

03:12PM 20 And the next stuff here, that comes from one of
21 the claim charts on this VFLOAT thing. Look what it does.
22 First, before you ever get in, they say they have all the
23 elements, and then they say "a device comprising," and they
24 go through the claim. And what do they use? What do they
25 say, as reflected in blah, as reflected in blah. The blah

1 is the printed publication that they say anticipates and
2 never showed the Patent Office.

3 So, when you add it all up, the last slide is
4 their -- when they tried to get a stay here, which they
5 successfully did, they touted all the benefits of the
6 Patent Office and how it's going to speed up everything and
7 all the rest, and all it's doing is complicating everything
8 and putting us a year behind.

9 And the bottom line is they knew of anticipatory
03:13PM 10 publications, they knew they described the device that's
11 obvious. They are, per se, cumulative of the case law that
12 we had, and they didn't cite it and that, there have to be
13 other consequences.

14 Someone's got to be at what they do here. They
15 tried. That was their strategy, they lost the IPR, and so
16 be it, and, thus, the way the case goes now, it's our
17 position that, in fact, they cannot, they should not be
18 able to introduce any, these three devices.

19 Why? Because the devices are prescribed by a
03:14PM 20 printed publication that they admit is anticipatory and
21 refused to give to the Patent Office, and that's exactly
22 what the case law we have says.

23 Now, I know they get into all the rest about
24 grounds, and I can address that a little bit later, but I
25 think the *Lawson* case addresses the idea that we're not

1 going to -- this isn't going to go down on grounds, it's a
2 difference of evidence more than anything else. It's the
3 same device, and the stuff they added was stuff they tried
4 to add and say, oh, well, we added new slides, we added
5 some new some slides, and we added some new, in those
6 declarations as to what we're going to do, new slides, and
7 then we're going to add some new source code.

8 Answer. The slides they say they're going to add.
9 1, they never gave them to us. Where do they come from?

03:14PM 10 Who knows. 2, we've got evidence that they're printed
11 publications anyways, so they could have given those to the
12 Patent Office. And what they don't tell you is that the
13 source code that they're relying on, they say, oh, we've
14 got the source code, that's in the thesis. That's in what
15 his name's thesis, Pavle's thesis. It's an appendix,
16 20-page appendix, the slides, but they've got nothing to do
17 with the price of bread other than to try to rename this
18 thing.

19 In fact, now, Judge, they call this thing VFLOAT.
03:15PM 20 We never heard the word "VFLOAT" for any particular thing,
21 so I think that's our position. We cite the case we cited,
22 and I think it's *Emma*, there is a time for an estoppel to
23 apply, it's here where they admit that the publications
24 anticipate and describe in detail all of the elements.
25 There's no missing elements in these publications.

1 THE COURT: So here's one of the things I'm
2 struggling with, and I genuinely don't know the answer to
3 it. So the statute says, in substance, you can only use
4 patents or printed publications for IPR review, so, you
5 know, what's left over, well, you know, systems, devices,
6 whatever.

7 There are probably some tinkerers out there who
8 have created systems or devices that were never described
9 in any patent or printed publication, but, in the modern
03:16PM 10 world, that's got to be pretty rare. I would think that
11 not only do patents and publications sometimes result in
12 systems or devices, but certainly that the normal thing,
13 it's probably like 99 percent of inventions, the system or
14 device results in some form of patent or printed
15 publication.

16 MR. HAYES: Right.

17 THE COURT: So what did Congress intend to do
18 there? What was intended to be left over? Was it only
19 this little tiny sliver of things where it's a home
03:16PM 20 tinkerer who somehow their system or device never got
21 mentioned anywhere in any article? Is that all that's left
22 over?

23 MR. HAYES: No, your Honor. The thing is is that
24 the case law that we cite in our argument only applies when
25 you're talking about a printed publication that describes

1 all of the elements of the claim and the device. That's
2 different than, in fact, a lot of these cases say, well,
3 for example, if it takes you some say private information
4 to render it obvious or invalid, and if it takes some
5 private information, well then, good, you can go and try
6 your device.

7 THE COURT: Like a trade secret sort of thing?

8 MR. HAYES: Yes, it's nonpublic. In fact, the
9 cases are right on that that I think the case, the only
03:17PM 10 case, whatever, four of the five elements were in a
11 publication, but one was missing, and so the one that was
12 missing, they say, ah, we can only get it through a private
13 circumstance unless we could never have argued that in the
14 Patent Office.

15 Well, the point is this case is totally different
16 in the sense that all the elements in the claim period, and
17 these devices are simply that, and the grounds, the
18 grounds, they use the word "grounds" to try to say this,
19 but, you know, the *Wasica* case talks about grounds, and
03:18PM 20 some of these other cases do, and they're talking about the
21 basic grounds that they're arguing invalidity are
22 anticipation and obviousness.

23 They're not arguing that it's just made by
24 another, period. What's made? It has to be anticipate.
25 The grounds that they argue in their expert report, it's

1 anticipated, and it's obvious. They want to use, for
2 example, well, to say it's anticipated but you don't think
3 it's anticipated, we're going to combine it with some
4 publications and patents and all the rest. That's nuts.
5 That does away with the whole concept of the estoppel
6 theory, so that's -- it's a very narrow case we're talking
7 this circumstance.

8 I mean, if they brought in, they don't have it,
9 right, but if they have a device, they bring someone in and
03:19PM 10 said I made device, and the guy comes in and he brings the
11 device and whatever, and he's describing a piece of private
12 information and all the rest, so be it, but if he's sitting
13 on a publication that has every single element that could
14 invalidate the patent in three seconds and he purposely
15 doesn't give it to the Patent Office, he's out.

16 Also, if we talk about the statute that talks
17 about TRIPOD publications, it doesn't exclude printed
18 publications that -- printed publications have to be
19 disclosed. It doesn't include ones that describe devices
03:20PM 20 or systems or whatever. It doesn't say, oh, you don't have
21 to disclose printed publications that show all the elements
22 of a device, no, a printed publication is all of that.

23 The point is they could have invalidated this
24 patent under their theory and we wouldn't even be here or
25 we wouldn't be having all this discussion and have to go

1 try it in validity. That's our position.

2 THE COURT: Can you touch on this business of
3 ground versus evidence or however you want to frame it,
4 statutory construction or anything?

5 MR. HAYES: Yes, if you think about it, the
6 grounds, if you say to yourself how or why are they saying
7 this patent is invalid? They're saying it's invalid, you
8 talk about a device or a system, it's made by another who
9 would not be suppressed or concealed.

03:20PM 10 You know what that means, they have to show
11 whatever was made, right, has all the elements of the
12 claim. And the ground that you're going to eventually
13 shall we say invalidate the patent is not because something
14 is made, it's the evidence that it's obvious or it's
15 anticipated. That's the issue.

16 So I don't think one necessarily per se excludes
17 another under any statutory interpretation, and I think
18 that's what Judge Stark and all these other courts have
19 said that you also have to balance this against the whole
03:21PM 20 statute of the estoppel issue because otherwise the
21 estoppel, under their theory -- and I would respectfully
22 say hutzpah, they think they can come in and use these
23 printed publications that they never disclosed to tell a
24 jury how this thing works or corroborate it. I mean, that
25 renders the estoppel theory meaningless in our view.

1 Thank you, Judge.

2 THE COURT: All right. Mr. Van Nest, are you
3 going to take the lead?

4 MR. VAN NEST: No, your Honor, Mr. Kamber is going
5 to take the lead on this one.

6 MR. KAMBER: Good afternoon, Matthias Kamber on
7 behalf of Google. As we noted in our brief, we think that
8 this broad brush motion was premature, fails as a matter of
9 law because it really wasn't directed to what's at issue.

03:22PM 10 As a practical matter, I think things have become
11 easier now, right? Google has served its expert reports on
12 December 22nd related to invalidity, and those reports made
13 clear that the prior art that Google relies on at this
14 point has been narrowed to three prior art systems,
15 devices, products, however you want to call it.

16 I agree with Mr. Hayes that I think those
17 definitions are all sort of the same for our purposes, but,
18 most importantly, I think the reports have made clear that
19 to prove invalidity, Google is relying on the testimony of
03:23PM 20 related fact witnesses. They're relying on documents
21 produced in response to third-party subpoenas. These are
22 the types of evidence that the PTAB could not under its
23 mandate consider an IPR. These were the types of prior art
24 that were specifically left to the district court, as I'll
25 explain in a moment.

1 So to that end, I want to start with just a brief
2 orientation about the relevant statutory provisions. I
3 think they help answer some of the questions just posed to
4 Mr. Hayes, and I would like to go through and explain, you
5 know, why those three prior art systems that Google relies
6 on aren't subject to IPR estoppel because the related
7 evidence goes far beyond the four corners of any
8 publication to include the actual systems as detailed in
9 percipient testimony and other nonpublished documents, all
03:24PM 10 of which describe features that are not entirely cumulative
11 and that are critically important to the two claims that
12 remain in this case.

13 Then after that, I do want to briefly address a
14 few things that Mr. Hayes had in his slides as well, but
15 let me start with our slides, and the second slide is a
16 copy of the text of 35 U.S.C. 311, which is the statute for
17 inter partes' review, and it talks about how you can
18 petition only on a ground based under 102 or 103 and only
19 on the basis of prior art consisting of patents or printed
03:25PM 20 publications, so the grounds of 102 or 103 that are covered
21 by patents and printed publications.

22 The petition itself, the next slide is 35 U.S.C.
23 312 has the requirements of the petition in Subsection A3
24 explains that when you file a petition, you have to state
25 the grounds on which the challenge to each claim is based

1 and the evidence that supports the grounds, including
2 copies of the patents and printed publications, so the way
3 this works as a practical matter, when you're filing a
4 petition, right upfront you have to say, okay, I have a
5 ground 102 that is anticipation based on Patent Number 102,
6 3, 4, 5, 6, 7, whatever it is, right?

7 THE COURT: Well, let's simplify, to simplify, I
8 mean, there's basically two grounds, anticipation and
9 obviousness.

03:26PM 10 MR. KAMBER: There's anticipation and obviousness
11 based on patents and printed publications.

12 THE COURT: Well, no, it says the ground.

13 MR. KAMBER: Right.

14 THE COURT: If you look at 311(b), there's two
15 grounds, 102 or 103. Again, I'm simplifying a little bit
16 because there's sub grounds, so to speak, and then it
17 doesn't use the word "ground" again, it says "only on the
18 basis of prior art consisting of patents," so you say it's
19 either anticipated or it's obvious, and the basis for that
03:26PM 20 is patent or printed publications, it's not a ground.

21 That's a basis supporting your ground.

22 MR. KAMBER: That's right. I agree with that,
23 your Honor, and 102 means everything is contained in a
24 single patent or printed publication. That is, if you have
25 a 102 ground on a printed publication, a single printed

1 publication has to disclose each and every limitation of
2 the claim.

3 103 is an obviousness combination where you're
4 allowed to combine things. You could say X patent in view
5 of Y patent or something along those lines, but for a 102
6 ground, you have to have everything in one publication,
7 which I think may end up being important.

8 So let me go now to the -- I think it's our fourth
9 slide, which is the text of 35 U.S.C. 315. Now, this is
03:27PM 10 the estoppel, it contains the estoppel provision and
11 language, and 315 makes it clear that what a petitioner is
12 estopped from is pursuing a ground that it raises under 102
13 or 103 as distinct from the evidence, that is, potentially
14 the publication or whatever the evidence might be.

15 Turning to 102, as we were just talking about,
16 your Honor, I think it explains the different bases for a
17 102 for an anticipation argument to say that everything was
18 disclosed in a piece of prior art, and I have the regular
19 text just in section, on slide 5, but I think it might be
03:28PM 20 more useful to look at slide 6 and 7 because slide 6 kind
21 of explains or calls out in red text what is estopped, what
22 is not allowed under 35 U.S.C. 315, and that is if you made
23 an argument under 102(a) that something was, for example,
24 patented or described in a printed publication in this or a
25 foreign country, the same language applies in 102(b) as

1 well.

2 But what that leaves, as you see it reflected in
3 slide 7 in the blue text is other grounds to other bases,
4 other anticipation arguments that the PTAB can't hear, that
5 the invention was known or used by others in this country,
6 if it was in 102(b) in public use or on sale. That relates
7 to products, right?

8 Then 102(g)(2), it was made in this country by
9 another inventor who had not abandoned, suppressed and
03:29PM 10 concealed it. Those are things that the PTAB cannot hear.
11 We cited the *Becton Dickinson* case, which was a situation
12 where somebody tried to present 102(g)(2) art to the PTAB
13 and the PTAB rejected and said this is not one of the
14 categories, this doesn't qualify as a patent or printed
15 publication that we can consider in doing our analysis.

16 So let me try to distill this a little bit. IPR
17 estoppel does not apply to art that was publicly known or
18 used for prior inventions by another. Congress left the
19 invalidity decisions regarding those categories of prior
03:30PM 20 art under 102(a), (b) and (g) to district courts with a
21 jury evaluating the evidence.

22 The statutory language says that IPR estoppel only
23 applies to patents and printed publications, and here all
24 of the prior art that Google relies on is system prior art
25 or arguments under 102(a), (b) and (g) for which estoppel

1 doesn't apply.

2 And this is our last slide, but I'd like to go
3 through it in a little bit of detail. This discloses the
4 three systems that Mr. Hayes also mentioned, the VFLOAT
5 system, which is the basis for 102 and 103 arguments,
6 including that Miriam Leaser, Dr. Miriam Leaser, and
7 Pavle Belanovic publicly disclosed their invention, which
8 is a 102(a) argument that they used it publicly, used it
9 under 102(b), and that they had a prior invention under
03:31PM 10 102(g) as well as the CNAPS system and the GRAPE-3 system
11 that I'll go through in some detail.

12 As to VFLOAT, your Honor, this was a library code
13 for field programmable gate arrays. These are basically
14 reprogrammable computer chips. Some computer chips come
15 out of the factory and they are sort of set in stone.
16 These are ones that can be kind of reprogrammed in
17 different ways, and the code library is written in a format
18 called VHDL, and it's freely distributed for people to use.

19 The system, the code, it was all developed in
03:31PM 20 Northeastern University, so sort of in your neighborhood,
21 by Dr. Leaser and Mr. Belanovic, and Dr. Leaser has been on
22 Rule 26 disclosures from the very beginning of this case.
23 Singular never chose to depose her about any of these
24 issues, but she's been out there from the beginning, and
25 this system had this board. It was called a Wildstar Board

1 made by a company called Annapolis Micro that had three
2 MPGAs on it, and they were actually used, Dr. Leeser and
3 her research student, they implemented multipliers using
4 different formats, including low precision and high dynamic
5 range formats.

6 The purpose of the research was just to figure out
7 how many of these things they could fit onto a chip as
8 compared to a standard IEEE single-precision load fire.
9 Dr. Leeser is going to testify about the system. She can
03:32PM 10 explain a lot of details about the system, how it was made,
11 how it was configured, how it worked, including the code
12 library that set, excuse me, that let somebody change the
13 different parameters and programmed these other LPHDR
14 execution units.

15 She can explain how she disclosed the idea to the
16 Los Alamos National Labs, which was sponsoring her research
17 as well as at different conferences, one at M.I.T., and she
18 can speak to details about the system that are relevant to
19 the invalidity issues but that are not entirely cumulative
03:33PM 20 of the printed publications, and I think that's the most
21 critical part here, your Honor.

22 The printed publications, and there are numerous,
23 not just one, we're not relying on just one, we rely on
24 different printed publications to corroborate details about
25 the system, but not a single one of those printed

1 publications could have been a ground for an anticipation
2 argument because they don't contain all the details, and
3 here's a particular example:

4 Both of the asserted claims at this point, your
5 Honor, require, and this was sort of the distinguishing
6 point, by the way, in the IPR proceedings, too, require
7 that, "The number of LPHDR execution units in the device
8 exceeds by at least 100 the nonnegative integer number of
9 execution units in the device adapted to execute at least
03:34PM 10 the operation of multiplication floating point numbers that
11 are at least 32 bits wide," so it's a bit of a mouthful,
12 but it basically says you have to have 100 more LPHDR units
13 than standard precision units, so what do you need for that
14 formula? You need to know how many LPHDR units there were
15 in the system, and you need to know how many standard units
16 were in the system.

17 Singular hasn't shown and can't, frankly, what it
18 calls the printed -- what it's calling the printed
19 publications. It can't show that they disclose an aspect
03:35PM 20 of the system.

21 Dr. Leeser knows what tests setup she had. She
22 was able to go back to her notes and figure it out. It was
23 a Pentium III computer that had up to four multipliers,
24 standard precision multipliers on it.

25 That's not disclosed in any one of the printed

1 publications that Singular is pointing to. That's
2 information that Dr. Leaser is a percipient witness is
3 going to provide about the VFLOAT system, and it's kind of
4 similar to this court's reasoning in the *Sionyx* case, the
5 fact that certain evidence goes to proving up the physical
6 system, including maybe printed publications is fine as
7 long as it's using other evidence that wasn't known.

8 And Mr. Hayes was conceding as much during the
9 course of his argument. He was saying, listen, if there's
03:36PM 10 other information that's coming from the documents or the
11 witnesses that's not disclosed in the printed publications,
12 then in that case, Google is allowed to pursue the
13 argument, it's not estopped from pursuing the argument.
14 That is exactly what's going on here. I mean, that is the
15 exact situation. It's not cumulative of anything, and they
16 won't be able to identify that in the publications. They
17 certainly didn't in their briefing.

18 THE COURT: Let me try to simplify it, and I
19 wouldn't assume, by any means, certainly I won't assume
03:36PM 20 that I got anything right in *Sionyx* or that I was not
21 painting with too broad or too narrow a brush, but let's
22 say if I'm thinking about this clearly, in an anticipation
23 argument -- I'm sorry, obviousness argument, so you have a
24 printed publication that describes W and X, and you have
25 another printed publication that describes Y and Z, and

1 Google doesn't disclose either of those publications in the
2 IPR, and then the witness comes in and says I have a system
3 that's W, X, Y and Z, oh, and, by the way, this is also
4 described in these publications, the first publication is
5 W, X, and here's the second one that says Y and Z. That
6 strikes me as being a complete end run around the IPR
7 process and the estoppel bar.

8 In other words, Google has held back publications
9 that it could have disclosed, that, you know, were relevant
03:37PM 10 to the obviousness argument. So it seems to me that that
11 just can't be right.

12 Now, if what you're saying, well, no, actually
13 there's U and V, and U and V have not been reduced to
14 publication publications, and they're an important part of
15 this analysis, well, maybe that's a little different
16 because your argument is not based entirely on printed
17 publications, but my first scenario, that just can't be
18 right, that first scenario, that can't be right.

19 MR. KAMBER: So, and I'll try to keep the letters
03:38PM 20 straight.

21 THE COURT: Sorry. It's easier for me to use
22 these mathematical terms.

23 MR. KAMBER: No, no, but I think you got your
24 finger on the issue here, and I'll say, I'll first give you
25 an answer, which is I think a little bit more of an

1 academic argument. I think the question, your first
2 question, if there is one printed publication with W and X
3 and another with Y and Z and we could have combined them in
4 a 103 argument, are we estopped from making the 102
5 argument? Again, I say that's academic because I don't
6 know. At that point, I think the 103 argument, frankly,
7 would be different than a 102 argument.

8 And the reason I say that is there are different
9 proofs related to obviousness that require proving
03:39PM 10 motivation to combine. There are objective indicia of
11 nonobviousness that the other side can raise, and so I
12 think that the grounds arguably are different, but I
13 think -- but it's a closer call, I agree with you, but here
14 this isn't that case.

15 What we're arguing, what we're telling your Honor
16 is that this is a case where it's much more like having, I
17 don't even know if it's a single reference, frankly, but
18 let's say multiple references that disclose. Well, let me
19 put it this way. Multiple printed publications that may
03:39PM 20 disclose with W, X and Y, but the fact of the matter is
21 none of those disclose Z, and the Z is one example, and I
22 think a key example is one that I just mentioned, which is
23 none of them give you that other part of the equation to
24 tell you whether or not the exceeds limitation is met, how
25 many standard precision floating point multipliers were on

1 the system, the VFLOAT system, for example.

2 It's actually a very similar issue with respect to
3 CNAPS, your Honor, where we got testimony about the whole
4 system but it's not described in the different papers. So
5 that's much more like *Sionyx*, and it's, frankly, different
6 than the hypothetical that you pose about the two different
7 references, and I think that's the key issue here is that
8 this evidence that *Wasica* case uses a pretty stringent
9 test.

03:40PM 10 It says the evidence in the printed publication
11 has to be entirely cumulative of the system, and the
12 evidence that we're seeking to propose, seeking to present
13 to the jury ultimately is not entirely cumulative. Not
14 only that, it addresses issues that are not disclosed in
15 any of the printed publications.

16 THE COURT: I'm not sure I'm comfortable with the
17 word "cumulative" or "duplicative" because the statute
18 doesn't say that. I may wind up in that place, but that's
19 not how the statute frames this.

03:41PM 20 MR. KAMBER: Well, I agree with that, your Honor.
21 I mean, the Federal Circuit hasn't spoken on that question.
22 Some courts have applied that kind of test or that kind of
23 reasoning. I think you, yourself, sort of applied it in
24 the *Sionyx* case to say, I don't know if it uses the word
25 "cumulative," but I do think that you were trying to

1 evaluate or grapple with the question of whether the
2 evidence that was being presented there about the sensor
3 was entirely contained in the printed publication.

4 You know, we don't think that -- I mean,
5 statutorily, you're right, that language is not there, and
6 that test is not there. Some courts have adopted, other
7 courts have rejected it.

8 THE COURT: It may be a sensible end point because
9 you can't have an estoppel system that gives you a great
03:42PM 10 big wide-open barn door, you know, to drive around, to be
11 able to hold back and if you lose relitigate the same
12 issue. It can't work that way.

13 MR. KAMBER: Right. Our point here is this isn't,
14 and Mr. Hayes sort of suggests we're trying to pull a fast
15 one, we're trying to have another bite at this. The fact
16 of the matter is, we couldn't have presented this 102(a),
17 102(g) [R] to the Patent Office.

18 We really couldn't have, and if he says, well, you
19 could have presented the related printed publications, for
03:43PM 20 better, for worse. Unfortunately, they don't contain all
21 of the limitations. For example, that exceeds limitation.
22 They don't disclose that aspect of it. They disclose how
23 many of the LPHDR execution units are there, but they don't
24 disclose the other details, and that's a place where we
25 need to be able to bring in a witness and explain, okay,

1 what was the system, how did it work, what were the
2 details, what was the setup, how many single floating point
3 multipliers did it have, somebody who can provide that
4 level of detail, so...

5 THE COURT: Putting aside the elements themselves,
6 are you permitted in the IPR process to put on evidence,
7 for example, of a motivation to combine, that sort of
8 thing?

9 MR. KAMBER: You are permitted, yes, usually
03:44PM 10 parties will use expert testimony and other arguments, and
11 they'll point to literature, for example, to say that
12 there's a motivation to combine or there would have been a
13 motivation to combine, and they can and do do that,
14 obviously, for a 103 ground, right, an obviousness ground.

15 THE COURT: Right. Okay.

16 MR. KAMBER: So let me just briefly touch on
17 CNAPS, your Honor, and GRAPE-3, and then I want to just
18 turn to the slides that Mr. Hayes showed because there are
19 two or three things I want to clear up.

03:44PM 20 Again, I mentioned CNAPS was a similar story.
21 This was a chip set that was developed by Adaptive
22 Solutions. It used these low-precision formats, but they
23 were fixed point, so our argument is that somebody of skill
24 in the art would have been smart enough to switch them from
25 fix point to floating point, as the technology, the silicon

1 technology got there, and we deposed the designer and the
2 founder of the company, Dan Hammerstrom. He was also a
3 technical advisor to Singular at one point and subpoenaed
4 him for documents about CNAPS, and those documents are
5 among the things that we cite in the related chart.

6 Our chart cites to half a dozen, maybe more,
7 publications describing different aspects of the CNAPS
8 system and cites to documents that he, himself, produced
9 that have specifications and other information about the
03:45PM 10 CNAPS system, so, again, that situation I think we submit
11 is like *Sionyx*, where we're relying on printed publications
12 in combination with other evidence that was acquired during
13 the course of the case that maybe wasn't a printed
14 publication of some sort.

15 So, GRAPE-3, that was a system that was developed
16 in Japan, was used for astrophysics simulations. It used a
17 logarithmic number system, kind of what's described in the
18 patents as well in Singular's device. That was on sale in
19 the United States. I mean, it was developed in Japan, but
03:46PM 20 we had percipient witness testimony about it being used and
21 sold in the United States, somebody who saw it at a
22 conference, somebody who knows the developers.

23 So, again, it was undoubtedly disclosed as a
24 system in our invalidity contentions, and so that it
25 shouldn't be subject to estoppel either.

1 Turning to the slides, your Honor, slides 3 and 4
2 of Singular's presentation, I just want to call this out.
3 They say in the second or the last bullet on each page,
4 they say, "Google knew of each of these references when it
5 filed. It is now estopped from relying on these references
6 in the case."

7 And, again, I think that's not true. We've looked
8 at the statute. Estoppel applies to grounds and not the
9 evidence, and they are sort of taking this and twisting it
03:47PM 10 just slightly to say, oh, you're estopped from using any of
11 these printed publications, but if your Honor's going to
12 rule it has to be we're estopped from submitting a ground
13 and we submit these printed publications are evidence,
14 they're corroboration, or what have you about the system,
15 again, as you found in the *Sionyx* case.

16 Slide 5, the third bullet mentions this Docket
17 Number 377-21. It was Exhibit R about the 21-page chart,
18 right? And they say, "Where Google applied the claims on
19 an element-by-element basis concluding that the printed
03:48PM 20 publication describing the device anticipated and rendered
21 invalid of the claims at issue," that's not true.

22 Our chart and our cover pleading says that the
23 VFLOAT was a system that was made and used. There's no
24 statement in that chart where we say -- and, by the way, we
25 couldn't have submitted that system, right, to the PTAB?

1 And I pulled it out after I saw the slides, and let me just
2 get to the right page here.

3 What it says is, "As reflected in the thesis and
4 related article, they made and used the system that
5 consists of a device." That's for the first element.
6 That's kind of the language that's repeated where we say,
7 "As reflected in the thesis, the article, otherwise they
8 made and used a system."

9 These charts don't say, look, there isn't a single
03:49PM 10 publication that discloses all of the elements of this
11 patent. They don't even say taking these two things
12 together, it's all disclosed, what they're saying is
13 there's corroborating evidence, and it's talking, but we're
14 calling out the fact that they made and used something.
15 These are the other statutory provisions of 102(b).

16 And I think that is critically important in this
17 case, as is the fact that -- and this is where I think it's
18 perhaps I think most daunting is on slide 8, Mr. Hayes
19 showed this bullet, he says, for example, VFLOAT claim
03:50PM 20 chart. He's citing to that same claim chart, Exhibit R.
21 It's 377-21. He says, "Publication disclosed every
22 element," and then he says "device comprising, as reflected
23 in the thesis," then period.

24 That's expressly not the argument that is
25 contained in the charts. It's not saying this thesis

1 discloses each and every element of the prior art. We
2 didn't chart and pointing to the thesis as evidence, but we
3 didn't say this thesis is a printed publication and that
4 invalidates under 102(a) or (b). That was never something
5 we said, and I think put these things together and the
6 argument becomes a bit of a house of cards on the Singular
7 side.

8 So, your Honor, let me just close by saying we're
9 talking about physical products here, physical products.
03:51PM 10 They can't be raised during IPR proceedings. Singular says
11 as much in their brief. The *Wasica* case says as much as
12 well, and these VFLOAT, CNAPS and GRAPE-3 systems are
13 undoubtedly systems, and Google is using a different form
14 of evidence above and beyond the printed publications, like
15 witness testimony and unpublished documents, to prove them
16 up, and the additional thing is that it's not cumulative.

17 Whether you want to apply that test or not, it
18 certainly is not in the statute, we agree with you there,
19 but the point is that those printed publications don't get
03:52PM 20 us all the way there. They didn't get us all the way there
21 back in the day when we wanted to file the IPR petitions.

22 Frankly, if we could have found all the
23 limitations in one of these theses or in two of the
24 documents together, we could and would have brought it, as
25 Mr. Hayes said, but because they don't disclose everything,

1 that sort of would have been a Kamikaze mission, and we had
2 to save this argument. We had to reserve these arguments.

3 We're not trying to be cute or have another go at
4 this. This is a situation where the district court was
5 really not just the best place but, frankly, the only place
6 under Congress's intent to present system art, to put in
7 front of a jury an actual working system described by the
8 witnesses and buttressed by the corroborating evidence.
9 This is our only opportunity to actually ever present this
03:53PM 10 evidence.

11 THE COURT: All right. Mr. Hayes, response?

12 MR. HAYES: Yes, your Honor. I'll start from the
13 end, and with all due respect to my client, to the other
14 side here, some of the statements made are just 100 percent
15 opposite to what was done in writing by Google beforehand.

16 The first thing I would like to point out, as my
17 Brother said, oh, we never said that there's anticipation.
18 False. I've cited to where it is, and I'd like to read it
19 to you. It says, "The attached respective claim charts,
03:54PM 20 (Exhibits 1-17) identify how the prior art discloses each
21 limitation of each asserted claim, period."

22 That's written by Google. That's written before
23 they lost. Now they lose and they come and tell you
24 exactly the opposite, oh, no we didn't think it
25 anticipated. Of course, they did. Then they say, oh,

1 well, if we did, we would have given it to them. Bananas.

2 I have a Law Review article written by Google's
3 own counsel, Nathan Speed, detailing how to circumvent the
4 IPR proceeding, exactly what they did. So, and that is
5 cited, "Litigation Invalidity After IPR Resolution." So
6 we're going on it.

7 The next thing is, and it points out the identical
8 strategy, the identical strategy that Google is now doing,
9 and you can find that on Volume 190, it looks like 1942,
03:55PM 10 page 27 of the Chicago-Kent J, Intellectual Property Bar
11 Association, where he talks about one potential strategy is
12 to insulate litigation from the impact of the IPR, make
13 all -- take all your publications that in fact look like
14 devices and save them until later. That's basically what
15 their strategy is, that's what they did, and it's not
16 genuine, what they just said to you.

17 Next, they say, oh, this couldn't be, this is not
18 cumulative, oh, no, couldn't be. That's wrong. Your
19 Honor, it's per se cumulative. They give a claim chart.
03:55PM 20 We have the claim chart, and as each and every element, my
21 Brother says, oh, we don't have the last element. That's
22 what he told you.

23 Let me show you the claim chart, which my Brother
24 never brings up, never tells anybody about it. Can you
25 pull up the claim chart that relates to that last element,

1 please.

2 Judge, can you see that?

3 THE COURT: Yes.

4 MR. HAYES: That's the claim chart for Claim 53
5 offered by Google. The element on the left is the element
6 that my Brother said, oh, no, we don't think that's
7 anywhere in the publication, we couldn't have done that.
8 Look what they said, as reflected in blank. That's it.
9 They applied that element and every single other element,
03:56PM 10 and so if this isn't putting, with all due respect to the
11 other side, (unintelligible). And it's sort of like
12 makeup, as we talked now.

13 The other thing, he is talking about, oh, we have
14 other stuff, nonpublic stuff. They don't have any
15 nonpublic stuff that is, in fact, in any declaration that's
16 been cited. They have source code, which lessens, and this
17 is a printed publication. It's published. They have
18 charts, which are printed publications. They could have
19 given them to them, and the charts show -- slides, and the
03:57PM 20 slides show nothing more than what's in the printed
21 publications.

22 I mean, you don't even have to get into that,
23 given the fact that the claim chart and the fact is what
24 they're trying to do I think is relatively self-apparent,
25 with all due respect.

1 They could have invalidated this patent or tried
2 to in the Patent Office with those printed publications on
3 both 101, 102 and 103. That's the same grounds, by the
4 way, that they now say they invalidate but with the system
5 because the system has to either anticipate or render it
6 obvious to invalidate. That's what invalidates the system,
7 not the fact that it's made. It's the same thing that's
8 made. It's the same thing that's in the publications.
9 They admit it.

03:58PM 10 There can be no dispute of this on the record, and
11 it's per se cumulative, and they're per se just trying to
12 avoid. The statute was never intended to allow this. I
13 don't know how you could interpret the statute to allow
14 someone not to disclose to the Patent Office a printed
15 publication you admittedly agree is anticipatory, hold it
16 back.

17 How does that help the court? How does that limit
18 the issues? How does that shrink or help anything? It
19 doesn't. It only helps Google. That's it. So that's my
03:59PM 20 position.

21 THE COURT: Okay.

22 MR. KAMBER: Your Honor, may I address a few
23 points?

24 THE COURT: Yes, last word.

25 MR. KAMBER: Thank you. I want to go back to

1 there's three arguments in order. Mr. Hayes started by
2 saying, look, they said this in their cover pleading, and
3 he read you some language, and it's true, what we said was
4 the attached respective claim charts, Exhibits 1 through 7
5 identify how the prior art discloses each limitation of the
6 asserted claims. We didn't say how each printed
7 publication discloses them. That would be saying
8 everything is anticipated by a prior art printed
9 publication.

03:59PM 10 We're saying the prior art discloses each
11 limitation. That's fully consistent with the argument that
12 we're making here before your Honor today as well as the
13 invalidity reports that were submitted.

14 We are saying the prior art, VFLOAT, CNAPS and
15 GRAPE-3 systems, actually the prior art VFLOAT and GRAPE-3
16 systems we argue disclosed each limitation. It's a 103
17 argument with respect to CNAPS, as I mentioned before, so
18 there's nothing that we said there that is inconsistent,
19 that is somehow belied by our argument.

04:00PM 20 Then there's this argument, there was a mention of
21 Mr. Hayes is constructing an argument I have not otherwise
22 seen that something is per se cumulative. And I think what
23 he is saying or what that title is meant to encompass is
24 the idea that if you use a printed publication in your
25 claim chart, then as a per se matter, you can't use that

1 printed publication as evidence to support a prior art
2 system. That's not what the law is.

3 The law is you can use printed publications to
4 describe or as evidence of a system. Again, there's
5 sometimes the cumulateness exception, but there's no such
6 thing as saying it's per se cumulative.

7 He points to again that chart that they pulled up
8 377-21. It's very clear, we never said that the printed
9 publication describes each and every element of the claim.

04:01PM 10 What we said was that the printed publication describes a
11 system that was made and used, and it doesn't cut to all of
12 the details of the system, including the exceeds limitation
13 that I talked about before.

14 This was something that was done as part of the
15 discovery process, as part of putting them on notice of the
16 theory, but to turn around and then use a chart and say,
17 well, this means because you relied on a printed
18 publication, and, by the way, not just a single one,
19 multiple ones to describe the system that somehow that's
04:02PM 20 per se cumulative, that just doesn't stand, and it's not a
21 legally recognized theory or argument.

22 And, finally, I want to talk about the source code
23 just briefly. I had meant to mention this before.

24 Mr. Hayes said, well, look, the source code was attached to
25 the thesis. You can look at the -- I think it's been

1 submitted as one of the exhibits. The thesis has two
2 appendices, Appendix A, that talks about the potential
3 inputs and the different parameters that the VFLOAT library
4 could use, and Appendix B was the code for an Adder
5 circuit, an additional circuit.

6 This case is all about a multiplier circuit, and
7 as that exceeds limitation that I read out before makes
8 clear, it's all about preparing multiplication circuits,
9 and that code is not part of the thesis. It wasn't part of
04:03PM 10 the printed publication, and the code, there's hundreds of
11 pages, or at least 100 pages, I would say, I would venture
12 of code that's not included in the Pavle Belanovic's thesis
13 and isn't part of the written record or part of the printed
14 publication.

15 THE COURT: All right. Here's what I'd like to
16 do. I'm going to call an end to this. I'm going to give
17 the parties an opportunity to file brief, nonrepetitive
18 post-motion or post-hearing supplemental briefs if you
19 choose. You don't have to. Why don't I give you until a
04:04PM 20 week from Friday, which I think is January, the 20th. In
21 light of the Martin Luther King holiday, I'll give a little
22 extra time if there's something you want to elucidate or
23 explain or emphasize arising out of this argument, and
24 otherwise I'm going to take it under advisement.

25 MR. KAMBER: Is there a page limit for that brief,

1 your Honor?

2 THE COURT: The page limit is having mercy on the
3 Judge and his law clerks. I will ask you to exercise
4 common sense. If you give me something that's 30 or 40
5 pages long, I'm going to groan inwardly and maybe
6 outwardly, so pick your spots. If you have a point that
7 you think you need to make that wasn't made quite as
8 clearly as you would have liked in your opening brief in
9 light of how this has unfolded or whatever, I'll give you
04:05PM 10 an opportunity do that, and you can take a pass for that
11 matter if you want to stand on your briefs. It's just an
12 opportunity, that's all.

13 MR. KAMBER: We'll exercise good discretion, your
14 Honor.

15 THE COURT: It's not the first time a lawyer has
16 made that promise to me. I'm not going to give an
17 artificial deadline because I don't know what you want to
18 say, if anything.

19 Mr. Hayes, does that work for you?

04:05PM 20 MR. HAYES: Yes, sir.

21 THE COURT: Thank you, all, and, again, I'll take
22 the motions under advisement, the motion. Thank you.

23 (Whereupon, the hearing was adjourned at
24 4:05 p.m.)
25

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

C E R T I F I C A T E

UNITED STATES DISTRICT COURT)
DISTRICT OF MASSACHUSETTS) ss.
CITY OF BOSTON)

I do hereby certify that the foregoing transcript,
Pages 1 through 42 inclusive, was recorded by me
stenographically at the time and place aforesaid in Civil
Action No. 19-12551 -FDS, SINGULAR COMPUTING LLC vs. GOOGLE LLC
and thereafter by me reduced to typewriting and is a true and
accurate record of the proceedings.

Dated January 16, 2023.

s/s Valerie A. O'Hara

VALERIE A. O'HARA

OFFICIAL COURT REPORTER